

# Marine Physical Laboratory

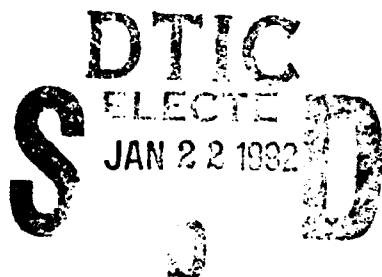
AD-A244 784



2

## Acoustic Reverberation Experiment Planning

W. S. Hodgkiss and J. A. Hildebrand

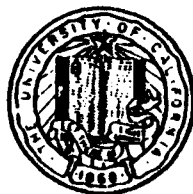


*Final Report to the Office of Naval Research  
Grant N00014-90-J-1577  
For the Period 01-01-90 - 12-31-90)*

MPL-U-80/91  
November 1991

*Approved for public release; distribution unlimited.*

92-01487



University of California, San Diego  
Scripps Institution of Oceanography

92 1 16 071

REPORT DOCUMENTATION PAGE			Form Approved OMB No. 0704-0188	
<small>Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.</small>				
1. Agency Use Only (Leave Blank).		2. Report Date. November 1991		3. Report Type and Dates Covered. Final Report
4. Title and Subtitle.  Acoustic Reverberation Experiment Planning			5. Funding Numbers.  N00014-90-J-1577	
6. Author(s).  W. S. Hodgkiss and J. A. Hildebrand			Project No. Task No.	
7. Performing Monitoring Agency Name(s) and Address(es).  University of California, San Diego Marine Physical Laboratory Scripps Institution of Oceanography San Diego, California 92152			8. Performing Organization Report Number.  MPL-U-80/91	
9. Sponsoring/Monitoring Agency Name(s) and Address(es).  Office of Naval Research Department of the Navy 800 North Quincy Street Arlington, VA 22217-5000			10. Sponsoring/Monitoring Agency Report Number.	
11. Supplementary Notes.				
12a. Distribution/Availability Statement.  Approved for public release; distribution is unlimited.			12b. Distribution Code.	
13. Abstract (Maximum 200 words).  The Office of Naval Research initiated a series of detailed surface and bottom reverberation planning meetings as part of the Office of Naval Research Acoustic Reverberation Special Research Program (SRP). As an outgrowth of these meetings, surface and bottom reverberation field measurement groups have been formed to engage in the detailed planning of surface and bottom reverberation experiments.				
14. Subject Terms.  acoustic reverberation                      low frequency acoustic energy surface and bottom reverberation			15. Number of Pages.  2	
			16. Price Code.	
17. Security Classification of Report. Unclassified	18. Security Classification of This Page. Unclassified	19. Security Classification of Abstract. Unclassified	20. Limitation of Abstract.  None	



# *Acoustic Reverberation Experiment Planning*

**W. S. Hodgkiss and J.A.Hildebrand**

**A Final Report Prepared for  
the Office of Naval Research  
Grant N00014-90-J-1577 for  
the Period 01-01-90 - 12-31-90**

Accession No.	
NTIS (CR-90)	J
DTIC (AD)	
Unpublished	
Justification	
By	
Date	
Title	
Dist	
A-1	

## *Objective*

Detailed planning of surface and bottom reverberation experiments as part of the Office of Naval Research Acoustic Reverberation Special Research Program (ARSRP).

## *Approach and Accomplishments*

The Office of Naval Research initiated a series of acoustic reverberation planning meetings in FY89. As an outgrowth of these meetings, surface and bottom reverberation field measurement groups were formed in FY90 to engaged in the detailed planning of surface and bottom reverberation experiments. Dr. Hodgkiss met with the surface group and Dr. Hildebrand met with the bottom group.

The scientific plan for the surface reverberation component of the ARSRP has placed special emphasis on low grazing angle backscatter and high wind speed conditions in the 15-30 kt region [1]. An experiment plan proposing the collection of a high-quality, well-documented data set evolved out of extensive discussions [2].

Although seafloor scattered wavefields have been studied previously, many of the seafloor characteristics important to their understanding had not been measured concurrently. Scattering may vary spatially in the ocean due to variations in seafloor roughness, sediment cover, and water depth. The scientific plan for the bottom reverberation component of the ARSRP has placed special emphasis obtaining a detailed description of the bottom in the "natural laboratory" where acoustic experiments are to be conducted [3]. The SRP natural laboratory will provide a setting where adequate environmental control is available to understand the connection between seafloor characteristics and scattering characteristics.

---

## References

### *References*

---

- [1] "Research Plan for Air/Sea Boundary Acoustic Scattering" (June 1989).
- [2] "Meeting Report: IOS, British Columbia" (1-2 February 1990).
- [3] "Bottom/Subbottom Reverberation Science Plan" (13 June 1989).

## **ONR/MPL Report Distribution**

Scientific Officer Code: 1125OA (3)  
Marshall Orr  
Office of Naval Research  
800 North Quincy Street  
Arlington, VA 22217-5000

Administrative Grants Officer (1)  
Office of Naval Research  
Resident Representative N66018  
Administrative Contracting Officer  
University of California, San Diego  
(Mail Code 0234) 8603 La Jolla Shores Drive  
San Diego, CA 92093-0234

Director, Naval Research Laboratory (1)  
Atten: Code 2627  
Washington, D.C. 20375

Defense Technical Information Center (4)  
Building 5, Cameron Station  
Alexandria, VA 22314